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THE PROGRESS OF JAPANESE INDUSTRY

By Hon. William C. Redfield, Member of Congress

When I set forth to find out, if I could, what the industrial situation in Japan actually was, by meeting the men who were doing the work and by visiting the factories and the mills in that country myself, I had no idea of using the information save for the perhaps sordid purpose of adding to the business of my own factory. Least of all had I a thought of appearing before such an audience as this and talking about it. I would very much rather speak to you about something a little less material. I should like to tell you something of Nikko and its wonderful temples. I should like to go over again my trip along the inland sea. I should like to have you go with me over to the island of Awaji, on a little steamboat, which was built for short men, and on which I could not stand up at all the whole forenoon. Those are the things I should enjoy telling you. Then, too, I should not like to seem to you unappreciative of the art and the traditions of art in Japan.

But it falls to me to talk with you on the economic side of the life of that great people. In so doing, I am going to try to avoid figures all I can and to touch as much as possible upon the fundamental basis of all economics—their human side. For you and I have been told too often that economics are a dreary thing. They are not, unless the food we eat, the clothes we wear, the work we do, the incomes we want and the money we spend, are dreary things. Those are human things, and he who would see economics thoroughly, must see and grasp the human side ere he attempts to apply figures. One is the bones of the science; the other its living life-blood and the flow of its every activity. Therefore, I want you to see a picture and not a form only. I want you to grasp a growth and not a theory. I want you to see a people evolving out of poverty into comfort, and not a

question of exports and imports. I don't care how much a Japanese artisan earns in a day. I care very much if it enables him to live a better life. So let us learn the evolution of Japan's industry in that way, so far as we can in the brief time we have. First let us divide our subject as the ministers of old did, that we may look at it with a certain amount of intelligence. We will speak of it, therefore, in four ways—the evolution of Japanese industry, the basis of Japanese industry, the outlook of Japanese industry, and, finally, Japanese industries as competitors and customers. Among them all we should fairly cover our theme.

To begin with, there is no other country in the world so interesting to the observer of industry as Japan, because it is almost the one country among them all where the old and the new in industry are going on side by side, each in full vigor. The day of the handicraftsman is nearly gone in Massachusetts. It is gone in England. It is gone in Germany. But in Japan the handicraftsman still reigns supreme. Side by side with an enormous mass of most skillful and artistic handicraftsmen goes on the modern factory system, and we must admit that in equipment, in size, and in management, the great Japanese factories have little to learn from Massachusetts. It is a matter, therefore, of extraordinary interest to see these two great phases of industry operating together. Not only that, but they may be seen on a very considerable scale. I should like to take you all first to Kyoto for many reasons. I should like to get you out of Yokohama as speedily as I could. To my mind Yokohama is a sort of foreign mushroom growing on Japanese soil. I did not like Yokohama; I did not like its atmosphere of gain. So we will pass from it and go where we may find old Japan at work in Kyoto. And now, ladies and gentlemen, I hope your purses are full, for when you enter Kyoto, you will need your purse reasonably well filled—not that the prices are so high but that the goods are so attractive. I really regard Kyoto as one of the most dangerous towns for the traveler from a financial standpoint that I ever knew. If you go into the Damascene shops and watch them in-laying in gold and silver, and then pass to the great potteries of

Kin Kusan, where there were nine hundred artists working at decorating porcelain when I was there, I am afraid, if you are fond of the fine porcelains that Kin Kusan put out, that you will say goodbye to your financial prudence.

In the old city of Kioto, the ancient capital, then, you find the beautiful, artistic industries of Japan in full force and vigor; they are wonderfully intricate and wonderfully beautiful to see. It is amazing and instructive to us with our mechanical ideas to see the close artistic work of the Japanese workmen in the old city of Kioto.

Now take the train for an hour to the south, and you come to Osaka with its million of people and its cotton mills; you have gone from the old world to the new, from the handicraftsman to the factory. You have left behind you the ancient and the artistic, and have come down to the sordid commonplace of a weaving-room and a spinning-room. Osaka is full of great cotton mills, and from there southward it is but a step again to Kobe and Hiogo, where in the great mills of the Kanegafuchi Cotton Spinning Company you will find a prosperity in the cotton industry which would make New England sit up and think. It was my good fortune, at their request, to take the steamer over to the little town of Sumoto, where I believe I was the only foreigner and where I was received with cordial hospitality. I could, if I had time, tell you of the interesting experience of going into a cotton mill and showing them how to start up a piece of machinery—showing them how it worked, which was rather an unusual experience for a lone foreigner on a Japanese island.

From there we will go to Nagasaki and see the women carrying baskets of coal. On my visit there, Mr. Matsuyama of Mitsui & Co., Ltd., told me that these women have a record of loading as much as eight thousand tons of coal in a single day. It may interest you, as showing the change that is going on, to know that he also told me that the day of the women workers loading the coal was passing away, because, although they received only somewhere from twelve to twenty cents a day in our money, it was cheaper to do the work with modern coal handling machinery, and

I was consulted as to what it should be and as to where it should be installed. In a very short time this one of the picturesque industrial phases of that particular port of Nagasaki will also have passed away.

Then at Nagasaki it is rather a striking thing for an American to walk out into a shipyard under a great ship of 21,000 tons, designed, built, to be managed, manned, officered, by Japanese, a ship with triple screws, a passenger vessel equipped with every modern convenience. Only a few days later I had the pleasure of traveling on her sister vessel to Manila. It makes one ponder, in view of the collapse of American shipping, to see such a vessel as that built in this Japanese yard, owned by Japanese owners and officered by Japanese officers, and built of the steel made at the Imperial Steel Works. One realizes that Japan in that important industry has become or is becoming independent. Not that the steel works ever have paid a profit; indeed, they have not. But they are run by the government, with the government as their largest customer; and they are at least sufficient to make the Japanese free, so far as her iron and steel supply is concerned, from the need of consulting other nations. In the making of machines, the building of ships and the manufacture of cotton, as I have said, we find in Japan in full operation—and in many cases in successful operation—all that we have here at home in scientific manufacture. Nor must we regard the men who control these interests as men whom we can teach very much. Mr. Matsukata, who is the head of the Kawasaki Dock Yards, is a graduate of Yale University. Another gentleman, the head of a large cement works, is a graduate not only of Yale but also of the Massachusetts Institute of Technology. One of the heads of these large factories was a member of the Harvard Club. You often run across men with American education, to which has been added European training and European brains, a combination which has made a certain selected number of these Japanese exceptionally skilled and able men.

Right here I want to say a word on the subject of Japanese commercial honesty. There is not anywhere in Europe or America a group of men higher in honor, more clear in

thought, more delightful to meet, more able in their work, than the set of Japanese gentlemen who are operating these great industries. We must forget all that we have heard coming from such centers as Yokohama as to tales of commercial dishonor. I am perfectly aware that in some respects Japanese commerce has not reached the heights of our highest ideals, but at its best it is as good as ours, and the best brains and thought of the nation are determined that it shall be always at its best. Very briefly, then, Japan presents the spectacle of the old and the new in industry, progressing side by side.

Now as to the bases on which her industry rests. Japan lacks large, free capital. She is as yet a comparatively poor people, as counted among the great nations—poor I mean in the sense of accumulated cash resources. Her capital is equally small. Her industries are handicapped by the lack of abundant capital for their expansion. That is one of the fundamental facts about Japan which is basic to all thought of the present and the future of the empire. The national debt of Japan is almost identical with that of the United States, while her population is but half. The national debt is largely held abroad. The strain upon the finances of the empire to carry on the necessary public works is very great. Many of these important public works are being deferred now for lack of the ready means to carry them on. Only for a moment will I touch on a few figures. The taxes of Japan have grown enormously in the last few years. The debt, which was in 1871 about \$2,500,000 is now about \$1,100,000,000. The taxation has grown in like proportion, from a total of about \$36,000,000 in 1894 to a total of \$160,000,000 per annum in 1909. Japan is not a rich country in cash, and nobody knows it better than the men who govern Japan. When I was there, the question of the development of the railway system was being considered with great care. It is urgently needed. The roads are all narrow gauge, and at times the industries suffer for railroad facilities, but the improvement even at Japanese wages would cost hundreds of millions of dollars. The question has been postponed, with other improvements,

because Japanese funds are not sufficient now to carry on those very large works.

Yet I do not want you to get the impression that Japan is in any sense insolvent. It is not. Her statesmen are guiding her with rare self-sacrifice and with uncommon wisdom, and her treasury shows a surplus every year. It is simply that her growth has been so rapid and her outreach so large that she lacks, as other nations do the ready cash with which to do the work as fast as she would like to do it.

Japan rejoices, on the other hand, in a wealth of labor of a remarkable character. I suppose there is no more thrifty, able, capable worker than the average Japanese. He is accustomed to living to his satisfaction on the most limited scale. He is of good mental and physical capacity, and capable of becoming a very great factor in industry. One of the fundamental facts in Japan is her splendid supply of abundant physical labor. Let us think a moment what our condition would be, if we could only cultivate about one-fifth of our territory. That is the case in Japan. A fraction less than 20 per cent of the land of the empire, speaking now of Japan itself, is arable. The other four-fifths is mountainous or of such a character that it cannot readily be cultivated. The holdings of the farmers are very small. They average about four of our acres, taking the whole empire together. And the result is that the population presses very closely upon the means of supplying food. Hence the Japanese exports his population; hence he has become a colonizing people; hence he goes whither he can to improve his circumstances.

The fact of the abundance of labor and of the pressure upon the means of living have combined to keep wages in Japan very low. Here we touch upon the third vital factor in Japanese industry—first, that the wages are low as compared with ours, and second, that they are rising very rapidly. For example, the wages of a mill weaver in the year 1907 were 0.42 of a yen. A yen being fifty cents, that was something less than twenty-five cents of our money to-day. But a weaver's wage has risen since 1905 from 0.18 to 0.42, or more than double. That of the shoemaker

rose from 0.41 in 1905 to 0.58 in 1907. And in every other Japanese industry, without going into too much detail, one finds the same advance in wages. So we have for our other element upon which to base our Japanese industry very cheap labor, but labor which is rapidly advancing in price. You cannot assume in discussing Japanese industry that the wage there is fixed, even for a short time to come.

But on the other hand, the Japanese mechanic is not trained yet in the mechanic arts, in the arts of handling machinery. He has had no chance. There are some in the great factories, but not enough. This *Japanese Year Book*, which I have before me, frankly says that it takes three Japanese mechanics to do the work of one European or American mechanic. That is merely a matter of training. The president of the big cotton mill that I have mentioned wrote to me that in ventilating his mill I must figure on three to four times as many operatives to do the work as was the case in our New England mills.

As regards the materials of industry, the empire extends over so great a latitude that the material products range from the sub-arctic to the sub-tropical of Formosa, and from the sea products of the ocean to the continental supplies of Korea. Formosa, I suppose, is one of the most productive countries of its size in the world. The sea products are a great source of wealth in Japan. She draws lumber from Formosa, and northern Korea; cotton from Korea, and lumber also from Karafuto. The empire is rich, of course, in silk. A little more than one-quarter of all the world's silk comes from Japan, and about 60 per cent of all we use in America is derived from there. She has no cotton on her own soil save that which is about to come rather than has come from Korea. She draws some of it from India, more from China, and most from the United States, but she is no worse off in that respect than England, the largest of all cotton manufacturers, who draws her supplies wholly from abroad.

Japan is blessed with ample materials for power. She has abundant coal and a very widespread and abundant supply of water power from the numerous streams coming from the mountain ranges. Consequently, Japan offers

a great field for the development of electric light and power, which is being very rapidly taken up. I have the pleasure of knowing the gentleman who operates the largest coal mines in Japan, and from them now they are making coke, gas, coal tar, ammonia, and other products.

To these resources she adds a market in China which is right at her doors and of its kind is the largest of the world; and the presence of that market just across the way is the reason why the cotton spinning industry took hold first in Japan and has progressed the most. She has already made her presence felt in our cotton mills in eastern New England. Some of the Chinese trade we used to have she has taken away, and will continue undoubtedly to take more, because she possesses a peculiarly intimate knowledge and sympathy with that market, and a closeness of touch with it, that no other nation can possibly have. We must expect for a time at least to lose a certain amount of our cotton trade in China to Japan. There is, as I have said, this great opportunity in the textile field. The four hundred or so millions of China are across the way and offer a magnificent market that Japanese brains are thoroughly familiar with and Japanese energy intends to look after.

The outlook for the iron and steel industries is not very bright for Japan, for she lacks a good supply of iron. But as Japan is a colonizing people, and as her people spread into the rich country of Formosa and Korea, and to the north, there is certain to come from the increase of wealth derived from their labor and thrift in these relatively uncrowded countries, a largely increased demand for the industries of Japan, which will give her a domestic market which she has heretofore lacked; so that Japan will come, normally, to find herself somewhat in the position that Germany occupies. Considering the great industrial countries, we would say England has very largely an exporting market. There are not people enough to take nearly all of the output of her factories. The United States has almost entirely a domestic market, the foreign sales of merchandise being only one-twentieth of our output. Germany, on the other hand, has both a domestic and foreign market, and into that happy

position Japan is evolving, by reason of her development of Korea and Formosa and of Karafuto at the north, as well as of her own territories,—and to which she may add the great market at hand in China.

Now if in Korea and in Formosa there is applied, as there is sure to be applied, the wonderful system of intensive cultivation which exists in Japan, there cannot fail to come from those countries a great increase in the agricultural wealth of the empire, and also in her domestic buying power. We may, therefore, look for a growing demand for Japanese industry which will speedily bring the prices of the wages up and the prices of the commodities up just as they have progressed in the past.

Side by side with these there is every reason to believe that the great porcelain industry in Japan and her other handicraft work will continue to grow and to expand as it has done for centuries. This country itself forms one of the largest—perhaps the largest—market of Japanese porcelains, and there is no reason to doubt that that great branch of her industry, in which she is so far advanced, will continue for many decades to come. In porcelain and other arts Japan holds a unique place; we all would be losers, were those industries to suffer.

There is every reason to think, therefore, that the outlook of Japanese industries, save those of iron and steel perhaps, is one of exceptional brightness. If so, what is to become of us? What is the position of Japan as a competitor? It is not for a moment to be expected that a nation as capable and intelligent as the Japanese will fail to supply the largest part of their own things so far as they have the material sources that enable them to do so. It would be absurd to think that anything else would be the case. It is not to be expected, either, that they will fail to supply the great Chinese market with cotton goods and with everything else they are able to take to a market which they understand better than anybody else and which is just across the road from their own mills. We must expect, therefore, for the present to lose a certain amount of trade in Japan in goods that we have been selling them but which they now make or

will come to make themselves. We must expect also to lose a certain amount of our Chinese market for the very same reason. But the very prosperity that will come to Japan, as Korea and Formosa and the other lands develop under her keen agricultural touch, the very growth of these industries arising from her Chinese market and her own growing, will increase the needs of Japan for things she does not make and must buy. That is always the rule as nations grow in industry. Furthermore, her labor, growing in productiveness, will grow in wage, for the wage is always based—whether the employer will have it so or not—ultimately on what the man produces, and as Japan produces more, her laborers will earn more. So it will not be true long that Japan will have any such advantage in price in the world's markets as is now represented by the difference in wages between her artisans and ours. Today for a given duty they employ a good many more people than we. In some of her industries too, she must frankly be admitted to be backward. Her locomotives cost more than ours do, and we sell them there and have 720 running on the Japanese railroads.

Some Japanese are very backward in certain ways. It is a very curious sight to see women driving piles for a building, which goes on all the time in Tokyo. The human being is still used as a draft horse, but the time is not so very far distant when the Japanese artisan can employ his time better than by pulling a jinrikisha through the streets of Tokyo. That will evolve out of existence just exactly as the coal handling woman is being evolved out of existence. With this evolution toward a higher wage comes the evolution toward a larger demand, and that demand will not be confined in Japan to the things that Japan produces any more than it is confined in America, or in England, to the things those countries produce. So, while there may be painful processes of readjustment, in the ultimate result what is good for Japanese commerce is good for American commerce, and that is true of any commerce anywhere. I have small patience with a narrow view of commerce, which makes it war between one man and another. Commerce, if it be a true commerce, is a thing that helps buyer and sel-

ler, and whatever, therefore, aids the buyer of Japan to buy, aids certainly the Americans to sell. So there is no reason to doubt that by the very act of her taking away a market here and there, she becomes better able to buy other things that we desire to sell.

The industry of Japan is in a sub-normal condition. The handicrafts are highly evolved and perfected. The factory system is well developed in some ways, but not largely developed and not highly perfected. There does not yet exist the great mass of artisans from whom a factory manager can draw a large supply of skilled labor at will. It has to be made. It is being made very rapidly. Her industries are not in the condition where we can speak of them as in any degree fixed. Neither are ours in this country; they change from year to year with startling rapidity. Hers are far less fixed than ours. They have to develop rapidly, and they have developed rapidly. We cannot form from the industries of Japan today any sound judgment as to what those industries will be ten years hence. This much we can say; they are certain to expand. Their artisans are certain to grow in number and in earning power. Japan is bound to gain rapidly in wealth. Her people are industrious and thrifty—very much like the French in both of those respects; and if she increases in wealth and in the growth of her industries, she will become—we must expect it—one of the great and growing factors in the commerce of the world. But for that reason no less our friend and no less valuable a customer for our produce.